

KARAPETYAN, K.I.

2

KITAYGORODSKII, S.A., AND STREKALOV, S.S., AND KARAPETYAN, K.I.

Universal relations between parameters of the turbulent air flow
above the sea and the energy spectrum of windwaves.

Report to be submitted for the 13th General Assembly, INTL. Union of
Geodesy and Geophysics (IUGG), Berkeley, Calif., 19-31 Aug 63

SHIRINYAN, K.G.; ADAMYAN, A.A.; KARAPETYAN, K.I.; KARAPETYAN, S.G.

Some characteristics of the distribution of trace elements in the
recent volcanic products of Armenia. Zap.Arm. otd. Vses. min. ob-va
no.2:27-56 '63. (MIRA 16:10)

ABOVYAN, S.B.; BAGDASARYAN, G.P.; KAZARYAN, G.A.; KARAPETYAN, K.I.;
MALKHASIAN, E.G.; MELIKSETYAN, B.M.; MNATSAKANYAN, A.Kh.;
CHIBUKHCHYAN, Z.O.; SHIRINYAN, K.G.; MELKONYAN, R.L., otv.
red.; CHAKHALYAN, TS., tekhn. red.; NUNYAN, S., tekhn. red.

[Chemical composition of igneous and metamorphic rocks in the
Armenian S.S.R.] Khimicheskie sostavy izverzhennykh i metamor-
ficheskikh gornykh porod Armianskoi SSR. [By] S.B. Abovian i dr.
Erevan, Izd-vo Akad. nauk Armianskoi SSR, 1962. 433 p.

(MIRA 16:2)

1. Akademiya nauk Armyanskoy SSR, Erevan. Institut geologiche-
skikh nauk.

(Armenia—Rocks, Igneous—Analysis)

(Armenia—Rocks, Crystalline and metamorphic—Analysis)

USSR/Cultivated Plants .. Commercial. Oil-Bearing. Sugar-Bearing. M

Abs Jour : Ref Zhur Biol., No 18, 1958, 82431

Author : Karapetyan, K.O.

Inst : Armenian Scientific Research Institute of Agriculture

Title : On the Problem of Pre-Planting Dipping of Cotton Seeds.

Orig Pub : Byul. nauchno-tekh. inform. Arm. n.-i. in-t zemled.,
1957, No 2, 7-9

Abstract : After warm air warming in the sun for 8-10 days and subsequent dipping in formalin, the cotton plant seeds were divided into 3 equal parts. One part was soaked in water for 24 hours, the other in 0.25% N_{aa} solution at 18-20° and the third was the control. The best germinating ability was found in the seeds with N_{aa} treatment. On plots planted with soaked (in water and N_{aa}) seeds, there were more plants affected with gummosis. The conclusion is

Card 1/2

- 85 -

Curu 2/2

KARAFETYAN, K.O., Cand Agr Sci--(disc) "Effect of the ~~pre-planting~~
^{Agro-chem} treatment of seeds ^{u/b} on the yield of cotton." Yerevan, 1959. 14 pp
Min of Agr USSR. Armenian Agr Inst), 150 copies (XL 22-53,111)

- 129 -

SIMONOV, M.Z.; KARAPETYAN, K.S.

Plasters from diluted gypsum-clay mixtures and their volume
variations. Izv. AN Arm. SSR. Ser. FIZM Nauk 5 no.1:71-79 '52.
(MLRA 9:7)
1. Institut stroitel'nykh materialov i sooruzheniy Akademii
nauk Armyanskoy SSR.
(Plaster)

KARAPETYAN, L.S.

Creep of tufaceous concrete. Izv. AN Arm. SSR, Ser. FNET nauk 5 no. 4:
69-75 '52. (MLRA 9:8)

1. Institut stroitel'nykh materialov i sooruzheniy AN Armyanskoy SSR.
(Concrete)

~~KARAPETYAN, K.S.~~

Creep of concrete under high pressure. Izv.AN Arm.SSR.Ser.FMET
nauk 6 no.2:79-89 Mr-Ap '53. (MLRA 9:8)

1. Institut stroitel'nykh materialov i sooruzheniy AN Armyanskoy
SSR.
(Concrete)

KARAPETYAN, K. S.

Karapetyan, K. S.

"Experimental investigation of the creeping of light concrete on natural porous fill." Min Higher Education USSR. Yerevan Polytechnic Inst imeni K. Marks. Yerevan, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

Knizhnaya letopis'
No. 21, 1956. Moscow.

KARAPETYAN, K.S.

Effect of form dimensions of shrinkage and creep of concrete. Izv.
AN Arm.SSR.Ser.FMET nauk 9 no.1:87-100 '56. (MLRA 9:8)

1. Institut stroitel'nykh materialov i vooruzheniy AN Armyanskoy
SSR.
(Concrete) | (Creep of materials)

KARAPETYAN, K.S.

124-57-2-2584D

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 2, p 149 (USSR)

AUTHOR: Karapetyan, K. S.

TITLE: Experimental Investigation of the Creep of Light-weight Concrete
Based on Natural Porous Fillers (Eksperimental'noye issledovaniye polzuchesti legkogo betona na yestestvennykh poristykh zapolnitelyakh)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree
of Candidate of Technical Sciences, presented to the Yerevansk.
politekhn. in-t (Yerevan Polytechnic Institute), Yerevan, 1956

ASSOCIATION: Yerevansk. politekhn. in-t (Yerevan Polytechnic Institute),
Yerevan

1. Concrete--Creep

Card 1/1

KARAPETYAN, K.S.
KARAPETYAN, K.S.

Effect of anisotropy on the deformation of concrete creep. Izv.
AN Arm. SSR. Ser. fiz.-mat. nauk 10 no.6:59-74 '57. (MIRA 11:2)

1. Institut matematiki i mekhaniki AN ArmSSR,
(Creep of materials) (Concrete)

KIRAPETYAN K.S.

97-58-5-5/14

AUTHOR: Simonov, M. Z. , Professor, Corresponding Member of the AS, Armenian SSR, Matuzov, T.G., Candidate of Technical Sciences and Karapetyan, K.S. Candidate of Technical Sciences..

TITLE: Use of Fine, High Strength Concrete for Prestressed Reinforced Concrete Constructions (Primeneniye vysokoprochnykh melkozernistykh betonov dlya predvaritel'no napryazhennykh konstruktsiy.)

PERIODICAL: Beton i Zhelezobeton, 1958, No. 5, USSR, Pp 178-182.

ABSTRACT: Fine aggregate concrete based on quartz or pumice sands and Portland cement of 350 kg per cm^2 activity could produce high quality concrete suitable for prestressed constructions. Vibro-ground cement intensifies hardening of concrete in the initial stages and by that reduces the time during which reinforcement should be kept under tension. At the same time vibro-ground cement slightly increases shrinking. Fine aggregate concretes based on pit sand in comparison with concretes based on crushed sand have lower elasticity (35-50%) than values given in NiTU 123-55. These should be taken into account when evaluating deformations in prestressed constructions based on fine aggregates. Fine aggregate light concretes have slightly higher elasticity than light concretes based on porous sand and ballast. Shrinking of high

Card 1/3

97-58-5-5/14

Use of Fine, High Strength Concrete for Prestressed Reinforced Concrete Constructions.

quality fine aggregate concretes is many times higher than shrinking in concretes based on sand and ballast. Shrinking of fine aggregate concrete based on sand from pumice is 13% higher than shrinking in concretes based on fine aggregate and quartz sand. Calculations show that in prestressed constructions made from fine aggregate concrete where the grains do not exceed 5mm in size if no special gradation is performed and when 600kgs per m^3 cement is used the loss of pretensioning due to "sluggishness" could be higher than permissible values. High strength values of concrete are obtained by the use of cement with increased activity and slow mobility of concrete mix. Under these conditions the cement requirements are between 450-500kgs per m^3 . Sizes of the aggregate depend on the proximity of the reinforcement bars and the thickness of the product. Careful granulation of aggregates is required. Table 1 gives values for hardening under controlled curing conditions during a three month period for concrete of various mixes and specific weights. Figure 1 illustrates graphs of the relationship of the strength of testing cubes made from fine concrete aggregate and the time. Table 2 gives the values of the

Card 2/3

97-58-5-5/14

Use of Fine, High Strength Concrete for Prestressed Reinforced Concrete Constructions.

moduli of elasticity and also strength values of test cubes of cube and prism shapes. Figure 2 illustrates graphs of the moduli of elasticity of test cubes made from fine aggregate concrete and their crushing strengths. Figure 3 is a graph of the relationship of shrinking values of testing cubes based on small aggregate concrete and the time (24 hours). Figure 4 illustrates a similar graph but taken over a period of 5 months. Figure 5 illustrates a graph of the "sluggishness" of fine aggregate concrete. Table 3 gives values for the "sluggishness" of tested concretes during a period of 145 days when the concretes were subjected to central compression of 60kgs per cm^2 . These values were compared with those of I.I. Ulitskiy and I.A. Rusinov as published in *Beton i Zhelezobeton* 1956, No. 12. According to K.S. Karapetyan (*Izvestiya AN Arm SSR*, 1952, Vol 5, No. 4) the tuff concrete Mark 110 is used when intensity of 20kgs per cm^2 is expected. Table 4 gives values of losses measured in set periods taking place in centrally loaded elements - 150kgs per cm^2 - during releasing of reinforcement.

Card 3/3

1. Concrete--Applications 2. Concrete--Properties

05691

SOV/22-12-4-4/9

16(1)
AUTHOR:

Karapetyan, K.S.

TITLE:

The Influence of Aging of Concrete on the Connection Between
Tensions and Deformations in Creeping

PERIODICAL:

Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-mate-
maticskeikh nauk, 1959, Vol 12, Nr 4, pp 57 - 88 (USSR)

ABSTRACT:

The author has already stated in [Ref 6] that the limits within which the tensions and deformations of a creeping concrete are proportional, essentially depend on the age of the concrete. In the present paper the author investigates this question in detail. The strength test of cylindrical test pieces ($R = 5$ cm, $H = 60$ cm) and of cubic test pieces ($10 \times 10 \times 10$ cm) led among others to the following results: Up to the relative tension 0.95 the connection between tensions and deformations under creeping can be described by two linear processes; the transition from the first to the second process depends on the age τ of the concrete. If $\tau \leq 7$ days, then the transition takes place for the relative tension 0.75, later on for 0.6. The transition takes place by the formation of microcracks. Up to the relative tensions 0.9-0.95 the connection between tensions and deformations under creeping

Card 1/2

KARAPSYAN, K. S.

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics.
Moscow, 27 Jun - 3 July 1960.

130. Yu. A. Krylov (Moscow): Problem of the theory of plasticity under dynamic loading.
131. Yu. E. Slobodan (Budapest): Elastic-plastic vibrations of rods of non-circular cross section.
132. Yu. E. Slobodan (Budapest): The current state of the theory of rectangular plates.
133. A. N. Gentil (Paris): On methods of solving the equations of magnetostatics in anisotropic media by the problem of a magnetic field.
134. A. N. Gentil (Paris): (Abstract). An approximate method for the solution of some problems of magnetostatics.
135. Yu. S. Kondratenko (Kharkov): The distribution of vertical compressive stresses and strains in foundations of structures.
136. Yu. S. Kondratenko (Kharkov): Boundary of existence of plates of vertical vibrations.
137. Yu. S. Kondratenko (Kharkov): The effects of static and uniformly distributed loads on the time of response in structures.
138. Yu. S. Kondratenko (Kharkov): On some variational principles.
139. Yu. S. Kondratenko (Kharkov): A problem of determining an impact load in a structure for large deformations.
140. Yu. A. Klyuchnikov (Kiev): Some characteristics of the forces of electromechanical and electro-mechanical systems and methods for their solution.
141. Yu. A. Klyuchnikov (Kiev): On the flow of a viscoplastic medium in a cavity.
142. Yu. A. Klyuchnikov (Kiev): On the elastic equilibrium of bodies with finite electrostatic charges.
143. Yu. A. Klyuchnikov (Kiev): On the influence of the temperature conditions on the stability of the steady state of the elastic medium and media.
144. Yu. A. Klyuchnikov (Kiev): Positive results of investigation of fields with finite discontinuities in a finite element of a viscoplastic field.
145. Yu. A. Klyuchnikov (Kiev): Viscous stability of cylindrical and finite cylindrical shells.
146. Yu. A. Klyuchnikov (Kiev): The influence of initial imperfections on the stability of thin elastic cylindrical shells under static compression.
147. Yu. A. Klyuchnikov (Kiev): Elastic stability and post-buckling.
148. Yu. A. Klyuchnikov (Kiev): The influence of initial imperfections on the stability of the natural vibrations of rods.
149. Yu. A. Klyuchnikov (Kiev): Strength and plasticity.
150. Yu. A. Klyuchnikov (Kiev): The theory of flexible plates and beams on anisotropic foundations.
151. Yu. A. Klyuchnikov (Kiev): Stability of rectangular shallow shells with a clamped side.
152. Yu. A. Klyuchnikov (Kiev): On the solution of the nonlinear vibration equations of shell theory.
153. Yu. A. Klyuchnikov (Kiev): On the propagation of waves in a system with variable specific weight and variable value permeability.
154. Yu. A. Klyuchnikov (Kiev): The static equilibrium of shallow plates with a finite number of elliptical holes.
155. Yu. A. Klyuchnikov (Kiev): Finite element method (Gauss).
156. Yu. A. Klyuchnikov (Paris): Internal stability of complex orbits.
157. Yu. A. Klyuchnikov (Paris): On the theory of plane plates.
158. Yu. A. Klyuchnikov (Paris): On the propagation of complex waves in a layered medium.
159. Yu. A. Klyuchnikov (Paris): On the propagation of complex waves in a layered medium.
160. Yu. A. Klyuchnikov (Paris): The propagation of the surface waves in a layered medium.
161. Yu. A. Klyuchnikov (Paris): The propagation of the surface waves in a layered medium.
162. Yu. A. Klyuchnikov (Paris): Application of the theory of elliptic partial principles to some problems of the theory of elastic-plastic processes.
163. Yu. A. Klyuchnikov (Paris): The investigation of magnetostatic properties of plastic substances.

SIMONOV, M. Z., doktor tekhn. nauk, prof.; KARAPETYAN, K. S., kand. tekhn. nauk

Shrinkage and creep of lightweight concretes in prestressed
construction elements. Bet. i zhel.-bet. no.10:450-454 0 '60.
(MIRA 13:10)

(Prestressed concrete)

SIMONOV, M.Z.; KARAPETYAN, K.S.

Designing and manufacturing reinforced concrete trellis posts for
vineyards. Izv. AN Arm.SSR.Ser.tekh.nauk 13 no.3:58-61 '60.
(MIRA 14:1)

(Viticulture—Equipment and supplies)

KARAPETYAN, K.S.

Creep of concrete in torsion. Izv. AN Arm. SSR. Ser. fiz.-mat.
nauk 15 no.6:23-37 '62. (MIRA 16:6)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.
(Creep of concrete) (Torsion)

KARAPETYAN, K.S.

Effect of anisotropy on the creep of concrete in compression and tension depending on the stress value. Dokl. AN Arm. SSR 39 no.1:13-20 '63. (MIRA 17:8)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR. Predstavлено
академиком AN Armyanskoy SSR N.Kh.Arutyunyanom.

KARAPETYAN, K.S.

Effect of the scale factor on the creep of concrete due to compression
or tension. Dokl. AN Arm. SSSR 38 no.3 :135-142 '64. (MIRA 17:6)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR. Predstavлено
академиком AN Armyanskoy SSR N.Kh.Arutyunyanom.

KARAPETYAN, K.S.; KOTIKYAN, R.A.

Effect of the scale factor on the shrinkage of concrete as
dependent on the moisture content of the medium. Izv. AN
Arm. SSR. Ser. fiz.-mat. nauk 17 no.2:91-103 '64.

(MIRA 17:9)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

KARAPETYAN, K.S.; KOTIKYAN, R.A.

Strength and deformability of concrete in the complex-stressed state. Dokl. AN Arm. SSR 39 no.4:201-206 '64. (MIRA 18:1)

1. Institut matematiki i mekhaniki AN ArmSSR. Predstavleno chlenom-korrespondentom AN ArmSSR S.A. Ambarisumyanom.

KARAPETYAN, K.S.

Effect of anisotropy on creep of concrete in compression and tension
depending on the scalar factor. Izv. AN Arm. SSR. Ser. fiz.-mat. nauk
17 no.4:71-90 '64. (MIRA 17:11)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

KARAPETYAN, K.S.; KOTIKYAN, R.A.

Fundamental equation of creep in the theory of an elastic creeping body. Izv. AN Arm. SSR. Ser. fiz.-mat. nauk 17 no.5:47-50 '64.
(MIRA 17:12)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

KARAFETYAN, K.S.

Effect of anisotropy on the creep of concrete as dependent on
the duration of vibration of a concrete mixture. Dokl. AN Arm.
SSR 40 no.4:197-203 '65. (MIRA 18:6)

I. Institut matematiki i mekhaniki AN Arzjanskiy SFR. Submitted
December 28, 1964.

KARAPETYAN, K.S.

Effect of prolonged compression on the strength and deformability
of concrete. Izv. AN Arm. SSR. Ser. fiz.-mat. nauk 17 no.6:83-101
'64. (MIRA 18:3)

1. Institut matematiki i mekhaniki AN ArmSSR.

KARAPETYAN, K.S.

Effect of anisotropy on the creep of concrete as dependent on the
moisture content of the medium. Izv. AN Arm. SSR. Ser.fiz.-mat.
nauk 18 no.2:58-73. '65. (MIRA 18:6)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

KARAPETYAN, K.S.

Effect of anisotropy on creep of concrete under compression as
dependent on the height of the specimen. Dokl. AN Arm. SSR 40
no.5:279-283 '65. (MIRA 18:7)

1. Institut matematiki i mekhaniki AN ArmSSR. Submitted
January 4, 1965.

KARAPETYAN, K.S.

Effect of the moisture content of the medium on the creep of
concrete. Izv. AN Arm.SSR. Ser. fiz.-mat. nauk 18 no.3:64-73 '65
(MIRA 18:8)

1. Institut matematiki i mekhaniki AN ArmSSR.

KARAPETYAN, K.S.

Effect of anisotropy on the strength and creep of concrete as
dependent on the quantity of cement used. Izv. AN Arm. SSR.
Ser. fiz.-mat. nauk 18 no.5:48-64 '65.

(MIRA 18:12)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR. Submitted
March 20, 1965.

PETROSYAN, G.P.; SAAKYAN, R.G.; KARAPETYAN, L.M.

Effect of the soda salinization of soil on the amino acid
composition of grapevine leaves and shoots. Izv. AN Arm.
SSR. Biol. nauki 17 no.5:19-27 My '64. (MIRA 17:9)

1. Institut pochovedeniya i agrokhimii Ministerstva proizvodstva
i zagotovok sel'skokhozyaystvennykh produktov Armyanskoy SSR.

L 10539-66 EWT(1)/T/FCS(k)

WR

ACC NR: AP5022422

SOURCE CODE: UR/0109/65/010/009/1594/1599

AUTHOR: Geruni, P. M.; Karapetyan, K. Ye.; Tribunyan, G. G.

ORG: none

TITLE: Remote-region field of round and rectangular apertures

SOURCE: Radiotekhnika i elektronika, v. 10, no. 9, 1965, 1594-1599

TOPIC TAGS: antenna directional pattern, radio antenna, Fourier series,
integration, integral equation, antenna directivity

ABSTRACT: By solving radiation integrals, formulas are developed which
describe the remote-region directional pattern for a rectangular aperture with an
arbitrary distribution of amplitudes and phases and for a circular aperture with
an axisymmetrical distribution of amplitudes and phases. The distribution laws
are approximated by a Fourier series and segments of straight lines; 3-4
expansion terms suffice for most practical calculations. In some particular

Card 1/2

UDC: 621.396.671

L 10539-66

ACC NR: AP5022422

cases, the distribution may be conveniently approximated by a polynomial. The formulas hold true when the phase distribution is close to uniform and has no nonmultiple- λ jumps. The formulas are intended for determining directional patterns from specified distributions of amplitudes and phases in the aperture, for synthesizing specified directional patterns, and kindred problems. "The authors wish to thank I. V. Vavilova for perusal of the material and valuable comments." Orig. art. has: 2 figures and 22 formulas.

SUB CODE:09,20/ SUBM DATE: 22Jun64 / ORIG REF: 005 / OTH REF: 001

Card 2/2 pu

SAAKYAN, R.G.; KARAPETYAN, L.M.

^c
Nucl^o acids in the grapevine. Dokl. AN SSSR 146 no.1:215-216
S '62. (MIRA 15:9)

1. Predstavleno akademikom N.M. Sisakyanom.
(Nucleic acids) (Grapes)



KARAPETYAN, M.

New set of booklets on industrial production and technological
processes. Prom.Arm. 6 no.2:73-75 F '63. (MIRA 16:5)
(Technical education)

KARAPETYAN, M. A.

Karapetyan, M. A. "The treatment of tumor of the bladder based on the findings of the urological department of the 1st Hospital and Roentgenological Institute, " (Report), Trudy III Zakavkazsk. s"yezda khirurgov, Yerevan, 1948 (on cover: 1949), p. 127-134

SO: U-5240, 17 Dec. 53, (Letopis 'Shurnal 'nykh Statey, No. 25, 1949).

KARAPETYAN, M. A.

"The Electrical Aging of Rubber-Insulated Cables." Cand Tech
Sci, Leningrad Polytechnic Inst imeni M. I. Kalinin, Min Higher
Education USSR, Leningrad, 1955. (KL, No 9, Feb 55)

SO: Sum. No. 631, 26 Aug 55-Survey of Scientific and Technical
Dissertations Defended at USSR Higher Educational Institutions
(14)

Armenia - 1974, 1117
KARAPETYAN, M.A.

Changes in electric characteristics of cables with rubber insulation
caused by their thermal aging. Izv.AN Arm.SSR. Ser.tekh.nauk 10
no.4:69-74 '57. (MIRA 10:10)

1. Yerevanskiy politekhnicheskiy institut im. K.Marksa.
(Electric cables) (Electric insulators and insulation)

SOV/144-59-12-18/21

AUTHOR: Karapetyan, M.A., Candidate of Technical Sciences, Dotsent

TITLE: An Instrument for Detecting Air Ionization in Three-Phase Transformers

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 12, pp 153-155 (USSR)

ABSTRACT: Various methods have been devised for detecting ionization in air voids in cables and capacitors. The best of these instruments comprise an electronic amplifier, a cathode ray oscilloscope and a bridge whose measuring diagonal includes high-frequency filters. Ionization in voids is becoming more important in transformers particularly with the introduction of organic film insulation of high thermal stability. The first attempts to measure the ionization initiation voltage in transformers were made with the instrument described above. The bridge circuit serves to suppress the fundamental frequency in the measuring circuit and the filter blocks the voltages which are not due to high-frequency discharge currents in the insulation. The disadvantage of the equipment is that voltages higher than 10 kV cannot be applied and it is difficult to overcome

Card 1/3

SOV/144-59-12-18/21

An Instrument for Detecting Air Ionization in Three-Phase Transformers

this limitation when a bridge circuit is used. A method that may be employed when the secondary winding of the transformer is connected in delta is shown diagrammatically in Fig 1. The delta winding is opened at one corner and a transformer is connected in; higher harmonics that are three-fold multiples of the basic frequency flow through the primary of this transformer. If there is no ionization in the transformer the phase emf's do not contain these harmonics. To the secondary winding of the transformer are connected a filter, an amplifier and an oscilloscope. A magnitude known as the "intensity of ionization" may then be determined and is defined. The optimum band pass width of the filter is discussed. If the secondary winding of the transformer is star-connected, the star point may be earthed through a resistance across which are connected the filter, amplifier and oscilloscope. When ionization occurs in the transformer, high-frequency voltages appear between the star point and earth and are measured by the equipment. The intensity of ionization is again defined for this case. Similar considerations probably apply to the

Card 2/3

✓

SOV/144-59-12-18/21

An Instrument for Detecting Air Ionization in Three-Phase Transformers
stator windings of alternators. There are 2 figures and
1 Soviet reference.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut (Yerevan
Polytechnical Institute)

SUBMITTED: January 3, 1959

Card 3/3

✓

DADAYAN, G.A.; KARAPETYAN, M.A., red.; AVETYAN, E., tekhn. red.

[Mineral wealth of Armenia] Bogatstvo nedr Armenii. Erevan,
Armgosizdat, 1963. 49 p. (MIRA 16:9)
(Armenia--Mines and mineral resources)

KARAPETYAN, M.B.

Scientific and practical conference of the Azerbaijani Scientific
Pharmaceutical Society. Apt. delo 11 no.2:75-77 Mr-Ap '62.
(MIFA 15:5)
(AZERBAIJAN--PHARMACEUTICAL SOCIETIES)

KARAPETYAN, M. G.

Organic Chem.

Paths of synthesis of optically active analogs of *p*-bromo-*p*-nitrobenzyl-2-(dichloroacetamido)-1,3-propanediamine (I) are described. (K. A. Kuznetsov, S. A. Vlasov, N. N. Karapetyan, M. N. Kostyuk, A. N. Kostyuk, Yu. N. Kostyuk, and N. N. Kostyuk). Zhurnal Akad. Nauk SSSR, Ser. Khim., 1963, No. 5, p. 1165-1170. Two synthetic paths for prepn. of analogs which contain substituents other than NO₂ are outlined. *D*- or *L*-dihydro-1-(*p*-nitrophenyl)-3-aminopropanediamide (II) treated with BaCl and 0.5*N* NaOH gave 70% of the corresponding *N*-Br deriv. (III): *D*-form, m. 171° (from EtOH), [α]_D -180° (MeOH); *L*-form, m. 171°, [α]_D 191°; *D*-form, m. 163° (from BaOH). These, reduced with H over active Ni at 20° and 50 atm., gave the corresponding *p*-*H*₂*N* analog (III) in 96% yield: *D*-form, m. 171°, [α]_D -100° (MeOH); *L*-form, m. 171°, [α]_D 99°; *D*-form, m. 163°. Diazotization of III at 0-5° in HCl or H₂SO₄ (3 hrs.) and treatment with the customary reagents gave the substituted derivs. as follows: CuCl gave 75% *L*-*p*-Cl deriv., m. 173°, [α]_D 102°; the *D*-isomer, m. 172°, [α]_D -103°. KI in dil. amin. after 12 hrs. at 0°, followed by treatment at 20°, gave 80% *p*-iodoanalog: *D*-form, m. 170°, [α]_D -87°; *L*-isomer, m. 170°, [α]_D 80°; *D*-form, m. 174°. Heating to 70-90° 0.5 hr. at pH 5-6 gave the *p*-HO analog: *L*-form, decomp. 196-8°, [α]_D 103°. CuCN at pH 7 and -5° gave 60% *p*-NC deriv.: *L*-form, m. 140°, [α]_D 120°; *D*-form, m. 140°, [α]_D -130°. Na₂AsO₄ with CuSO₄ at 15° gave 22% *p*-H₂O₂As deriv.: *L*-form, decomp. 160-8°, [α]_D 80°. Treatment with EtOH-Cu gave the unsubstituted compd.: *L*-form, m. 180°, [α]_D 99°. These compds. (V) on refluxing several hrs. with 20% HCl lost the *N*-Br group and yielded *p*-*Cl*, *H*, *CH(OH)CH(NH₂)CH₂OH* of the three type as follows (2 isomers): *Cl*, 50%; *L*-form, m. 147°, [α]_D 35°; *D*-form, m. 147°, [α]_D -34°; *Iodo*, 55%; *L*-form, m. 104°, [α]_D 24°; *D*-form, m. 104°; *CO₂H*, 05%; *L*-form, decomp. 348-9°, [α]_D 33°; *D*-form, decomp. 348-9°, [α]_D -32°. The former 2 substances heated briefly with Cl₂CHCO₂Me at -93° or the last substance treated at -5° with Cl₂CHCOCl, gave the *N*-dichloroacetamid deriv. (*p*-substituent shown): *Cl*, 47%; *L*-form, m. 63°, [α]_D -9°; *D*-form, m. 9.8°, [α]_D 18°; *pt*-form, m. 120°; *Iodo*, 72%; *L*-form, m. 104°, [α]_D -11°; *D*-form, m. 104°, [α]_D 10°; *Dl*-form, m. 123°; *CO₂H*, 70%; *L*-form, m. 191°, [α]_D -14°; *D*-form, m. 191°, [α]_D 12°. Racemates obtained by mixing the *L*- and *D*-forms of the *p*-Cl or *p*-Iodo derivs. were identical with the *Cl* or *Iodo* analogs of chloramphenicol, thus showing the preservation of threo-structure. The 2nd route was as follows. Hydrogenation of *D*- or *L*-I gave 90% of the corresponding *p*-*H*₂*N* deriv.: *L*-form, m. 123°, [α]_D 28°; *D*-form, m. 136°, [α]_D -29°. These with Cl₂CHCO₂Me in MeOH after 2 hrs. at 18-23° gave the *p*-dichloroacetamido deriv., isolated as *HCl* salts in 25% yield: *L*-form, [α]_D -9°; *D*-form, [α]_D 8°. These diazotized rapidly and were converted conventionally to the following derivs.: *p*-*Cl*, identical with that described above; *p*-*CN*, 52%; *L*-form, m. 130°, [α]_D -17°; *D*-form, m. 136°, [α]_D 15° (hydrolyzed to the *CO₂H* analog, identical with that described above). *HO* deriv., 46%; *L*-form, m. 156°, [α]_D 8°; *D*-form, m. 150°, [α]_D -8°. G. M. Kostyuk

AFF
1-27-51

13

Chemistry of chloromyccetin (levomycetin). II. Study of the paths of synthesis and synthesis of optically active analogs of chloromyccetin. M. M. Shemyakin, N. M. Bamdas, E. I. Vinogradova, M. G. Karapetyan, M. N. Kolosov, A. S. Khokhlov, Yu. B. Shvetsov, and L. A. Shchukina (Inst. Biol. and Med. Chem., Acad. Med. Sci. U.S.S.R., Moscow), *Zhur. Obschch. Khim.* 23, 1854-67 (1953); *cf. Doklady Akad. Nauk S.S.R.* 79, 601 (1951); *C.A.* 48, 640c. Two general paths of synthesis of optically active analogs of chloromyccetin of type ρ -XCH₂CH(OH)-CH(NHCOCH₂Cl)CH₂OH with various groups X are described; both methods start with substances of known spatial structure which is unchanged during the synthesis. It was shown that the method of Long and Troutman (*C.A.* 44, 5081) in a number of instances can yield analogs of chloromyccetin that belong to the *threo* series. Benzoylation of *d*-(I), *L*-(II), and *D*-forms (III) of *threo*-1-(ρ -nitrophenyl)-2-amino-1,3-propanediol with BzCl in 0.5*N* KOH and Et₃O gave 70-85% yields of the *N*-Bz derivs. of: I, m. 171-2°, $[\alpha]_D^{25} -120.5^\circ$ (MeOH); II, m. 171-2°, $[\alpha]_D^{25} -121.6^\circ$; III, m. 182-3°. Hydrogenation of these in EtOH over Raney Ni at 75-80° and 40-50 atm. II initially gave 61-5% corresponding β -amino analogs of the *N*-Bz derivs. of: I, m. 170-1°, $[\alpha]_D^{25} -100.5^\circ$; II (IV), m. 170-1°, $[\alpha]_D^{25} -93.5^\circ$; III, m. 151-3°. IV (6 g.) in 60 ml. 5% H₂SO₄ was diazotized with 20% NaNO₂ at 0-5° (excess HNO₃ being destroyed by urea), the soln. treated with 60 ml. EtOH and 8 ml. concd. H₂SO₄, and followed at 0-5° by 0.75 g. Cu bronze; after the reaction subsided, the mixt. was heated to 50-50° until the reaction was complete (0.5 hr.) and the filtrate was adjusted to pH 5.5-6.0 with 20% NaOH; EtOH was removed *in vacuo*, the residue extd. with EtOAc, the ext. washed with dil. NaOH and H₂O, dried, clarified with C.

etned, and cooled yielding 55% of *threo*-1-(ρ -benzoyl)-2-amino-1,3-propanediol, m. 184-6°, $[\alpha]_D^{25} 98.0^\circ$; the diast. deriv. with H₃PO₄ gave a product identical with the above but which required more extensive p. o. treatment. The diol warmed with Ac₂O-pyridine gave the *DL*-deriv. (m. 146-8° (from 50% EtOH)). When IV was diazotized in 17% HCl at 0-5° and treated at 0° with CuCl, there was obtained 75% *L*-threo-1-(ρ -chlorophenyl)-3-benzoylaminohydroxy-1,3-propanediol, m. 171-2°, $[\alpha]_D^{25} -102.4^\circ$; similarly the *D*-threo-deriv. (m. 171-2°, $[\alpha]_D^{25} -102.8^\circ$) was obtained from the *D*-threo analog of IV. In a few instances the *D*- and *L*-derivs. were obtained which m. 153°, but showed the same optical activity as the specimens described above and gave the same aminodiol on hydrolysis of the Bz groups. Diazotization in dil. H₂SO₄ and treatment with KI gave the *L*-iodo analogs: *L*-threo, m. 178-9°, $[\alpha]_D^{25} -87.5^\circ$; *L*-threo, m. 178-9°, $[\alpha]_D^{25} 89.2^\circ$; *D*-threo, m. 173.5-4.5°. If the diazotized *L*-threo deriv. in dil. H₂SO₄ was neutralized with NaHCO₃ to pH 6 and heated to 70-80°, there was obtained 40% *L*-threo ρ -HO analog, m. 193-8° (decompn.), $[\alpha]_D^{25} -103^\circ$. Treatment of the diazotized soln. after adjustment to pH 5.5-6, with Cu(CN) soln. under MePb gave the corresponding *D*-cyan analog: *D*-threo, m. 129-40°, $[\alpha]_D^{25} -130.4^\circ$; *L*-threo, m. 180-40°, $[\alpha]_D^{25} 129.8^\circ$. IV (2.8 g.) in 14 ml. 10% H₂SO₄ was diazotized at 0-5° with 20% NaNO₂, neutralized with CuCO₃, to Congo red, filtered, and the filtrate treated with 1.5 g. Na₂Co(NO₂)₄ and cooled to 3-5°; after 15 min. the soln. was decanted from the ppt. and th. was treated with cooling with 0.4 g. Cu₂O suspension in 1 NaNO₃ and 1 g. CuSO₄·5H₂O in 6 ml. H₂O; after 10-12 hrs. the mixt. was extd. with EtOAc and the washed and dried ext. gave after evapn. and extn. with H₂O, the *D*-threo-deriv. of IV; this was identical with II. Treatment of the

Inst. Biol. and Med. Chem., A.M.S. USSR

2/3 M. M. SHEMYAKIN

neutralized and neutralized (pH 6.5) soln. of IV with AgO-CuSO_4 similarly gave ρ -cresone analogs of IV: L-threo, m. 142-3° (decomp.), $[\alpha]_D^{25}$ 88.5°. Treatment of diazotized IV with 2-C₆H₅OH in cold NaOH-Na₂CO₃ gave the red L^1 -1-*chlorophenyl*-2-*amino*-1,3-propanediol: L-threo, decomp. 224-6° (from MeOH), $[\alpha]_D^{25}$ 180°. Hydrolysis of the corresponding benzoyl衍物, by heating 4 hrs. with 20% HCl gave 58% 1-*benzoyl*-1-(*p*-chlorophenyl)-2-amino-1,3-propanediol (V), m. 146-7°, $[\alpha]_D^{25}$ -43.0°; L-threo analog, m. 145-7°, $[\alpha]_D^{25}$ -43.0°. The ρ -threo analog, m. 193-8°, was obtained by mixing the 2 forms. The ρ -iodo衍物 were hydrolyzed by refluxing with 10% HCl 10 hrs.: D-threo-1-(*p*-iodophenyl)-2-amino-1,3-propanediol (VI), m. 103-4°; similarly was obtained the L-threo analog, m. 103-4°, $[\alpha]_D^{25}$ 23.0°; DL-threo analog, m. 180-1°. The cyano衍物 were hydrolyzed 20 hrs. with 20% HCl yielding ρ -carboxy analogs: D-threo-1-(*p*-carboxyphenyl)-2-amino-1,3-propanediol (VII), decomp. 314-5°, $[\alpha]_D^{25}$ -22.4°; L-threo analog, decomp. 342-8°, $[\alpha]_D^{25}$ -11.0°. These are lower salts and are insol. in org. solvents, but are sol. in alk. solns. or in acids; they are not dichloroacetylated with $\text{Cl}_2\text{CHCO}_2\text{Me}$, but are acylated by the acyl chloride in presence of K₂CO₃. Heating 2.9 g. $\text{Cl}_2\text{CHCO}_2\text{Me}$ with 2.7 g. D-threo-V to 90° 5 min., rubbing the mixt. 3 times with 5-ml portions of heptane, dissolving the residue in 2-3 ml. (CH₂Cl)₂, adding 3 ml. heptane and allowing the mixt. to stand overnight gave 47% D-threo-2-(dichloroacetamido) analog of V, m. 92-3°, $[\alpha]_D^{25}$ 8.2°; similarly was obtained the L-threo analog, m. 92-3°, $[\alpha]_D^{25}$ -10°; mixing these gave the DL-threo analog, m. 110-20°. Similarly was obtained 2-(dichloroacetamido) analogs of VI: D-threo form, m. 103-4°, $[\alpha]_D^{25}$ 0.7°; L-threo form (VIII), m. 103-4°, $[\alpha]_D^{25}$ -5.0°; the L-threo form was obtained by mixing the D- and L-forms, m. 122-3°. VII treated with NaO-CuO gave 71% 2-(dichloroacetamido) analog, m. 160-1°, $[\alpha]_D^{25}$ 12.0°; L-threo form, m. 152-1°, $[\alpha]_D^{25}$ -13.3°; mixing these gave the DL-form, m. 158-1°, $[\alpha]_D^{25}$ -13.3°. Hydrogenation of D- or L-threo forms of II in EtOH on Raney Ni at 75-80° and 40-53 atm. gave L^1 -2-*amino*-1,3-propanediol: D-threo form, m. 135-6°, $[\alpha]_D^{25}$ -21.5°; amino analog: L-threo form, m. 135-6°, $[\alpha]_D^{25}$ 27.5°. Treatment of these with $\text{CH}_2\text{CHCO}_2\text{Me}$ in abs. MeOH 24 hrs. at 18-23° gave 1-(*p*-aminophenyl)-2-(dichloroacetylaminyl)-1,3-propanediol, 1-(*p*-aminophenyl)-2-(dichloroacetylaminyl)-1,3-propanediol, or HCl salts (from MeOH-Ba(OH)₂): D-threo form, m. 149-8°, L-threo form, m. 147-5°; these do not melt, but slowly decom. on heating. Hydrogenation over Raney Ni at atm. pressure of D- and L-threo-1-(*p*-nitrophenyl)-2-(dichloroacetamido)-1,3-propanediols and treatment of the products with aq. HCl gave 86-95% HCl salts of the ρ -nitro analogs, with 23-72% original nitro衍物 being recovered. Diazotization of D- or L-threo-1-(*p*-nitrophenyl)-2-(dichloroacetamido)-1,3-propanediol (IX) in 5% HCl with aq. NaNO₂ gave ppts. of the corresponding diazonium chlorides: D-threo, 41%, $[\alpha]_D^{25}$ 9.5°; L-threo, 1a, $[\alpha]_D^{25}$ -9.8°; these decom. on heating, but do not melt. Treatment of the diazotized soln. with Cu₂Cl₄ gave 45% VIII (from (CICH₂)₂ and heptane), identical with the previous prep. If the diazotized soln. in dil. H₂SO₄ is heated to 70-80°, after adjustment to pH 5.5, there is formed ρ -HO analog: D-threo form, decomp. 160-1.0°, $[\alpha]_D^{25}$ -8.1°; L-threo form, decomp. 160-1.0, $[\alpha]_D^{25}$ 7.80°; mixing these gave the DL-form, m. 138-40°. Treatment of the diazotized soln. with (CuCN)₂ as described above gave the ρ -cresolobenzyl analog, m. 138-40°, $[\alpha]_D^{25}$ -17.0°; mixing these gave the form, m. 135.5-0.5°, $[\alpha]_D^{25}$ -17.0°; mixing these gave the

3/3 M. M. SHEMYAKIN, et al.
DL-form, m. 123.5-3.5°. Hydrolysis with HCl gave the
p-carboxy derivative. Treatment of the diazotized and neutralized soln. with AsF_3 and CaSO_4 similarly gave the
p-nitrophenyl deriv. in 10% yield; D-threo form, $[\alpha]_D^{25} 8.0^\circ$;
L-threo form, $[\alpha]_D^{25} -7.8^\circ$; neither shows a definite de-
compn. temp. IX. HCl (D- or L-threo forms) diazotized as
usual in dil. HCl and treated with *p*-O₂NCH₂OH in the
presence of NaOH and Na₂CO₃ at 15-20° 2 hrs. gave on
acidification the *p*-nitro-*l*-hydroxyphenylazo deriv. purified
by pptn. from (CH₂Cl)₂ with heptane, followed by cryst.
from 30% AcOH; D-threo form, m. 157-9°, $[\alpha]_D^{25} 21.2^\circ$;
L-threo form, m. 157-8°, $[\alpha]_D^{25} -22^\circ$; mixing these gave the
m. form, m. 153-5°. IX. HCl (D- or L-threo forms) (2.3 g.)
in 15 ml. H₂O was treated with 0.8 g. AcONa in 10 ml.
MeOH and filtered; at 5° the soln. was treated with 0.95 g.
p-ONC₆H₄NO₂ in 15 ml. AcOH; after 10-13 hrs. there was
obtained 56% *p*-nitrophenylazo deriv., D-form, m. 173-1°,
 $[\alpha]_D^{25} -69.2^\circ$; L-threo form, m. 173-4°, $[\alpha]_D^{25} 84.9^\circ$; mixing
these gave the DL-threo form, m. 171-2°. A small amt. of
p,*p*'-dinitroazobenzene, m. 191-2° was isolated from
the reaction mixt. Condensation of IX with *p*-O₂NCH₂
H₂CHO in the presence of KOAc in MeOH gave the *p*-
nitrobenzylidene deriv.; D-threo form, m. 164-6° (decompn.);
from Et(OH), $[\alpha]_D^{25} -18.8^\circ$; L-threo form, decomp. 165-7°,
 $[\alpha]_D^{25} 19.7^\circ$; mixing these gave the DL-form; m. 155-7°
(decompn.).

G. M. Kosolapoff

KARAPETYAN, M. G.

"Studying Routes to the Synthesis, and the Synthesis of Levomycetin (Chloromycetin) Analogs." Cand Chem Sci, Inst of Biological and Medical Chemistry, Acad Med Sci USSR, Moscow, 1954. (RZhKhim, No 21, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

KARAPETYAN, M. G.

✓ Chemistry of chloromyctein (levomyctein). VI. Synthesis of new optically active analogs of chloromyctein (levomyctein). M. M. Shchuyakin, M. N. Kolosov, M. G. Karapetyan, E. M. Baindas, Yu. B. Shvetsov, E. I. Vinogradova, and L. A. Shchukina. *Zhur. Obschei Khim.* 25, 1109-1208 (1955); cf. *C.A.* 49, 9465, 14074e. — Diazotization of 10 g. D- or L-threo-*p*-H₂NC₆H₄CH(OH)CH(CH₂OH)NHCOCHCl₃ (I) in 10% H₂SO₄ at 0-3° with NaNO₂, treatment with 40-50 g. SO₂ in 200 g. 25% H₂SO₄, *situ*, at -10° with SO₂ with slow addn. of 10 g. powd. Cu at -5° to -10° followed by filtration, extn. of the filtrate with Et₂OAc, and evapn. of the dried ext. gave 53-8% *p*-H₂O₂SCr-H₂CH(OH)CH(CH₂OH)NHCOCHCl₃ (further purification by treatment with AcOH); D-threo isomer, softens at 125-7°, $[\alpha]_D^{25} -40.6^\circ$ (Me₂CO); L-threo isomer, softens at 125-8°, $[\alpha]_D^{25} 45.2^\circ$ (Me₂CO). The sulfonic acid (1 g.) in 2 ml. H₂O treated with 0.25 g. NaHCO₃ in 0.5 ml. H₂O and 0.5 g. AgNO₃ gave the ppt. of Ag sulfinate, which dried rapidly *in vacuo* and darkness at 30°, then shaken in the dark, with MeI gave 65% *p*-MeO₂SC₆H₄CH(OH)CH(CH₂OH)NHCOCHCl₃; D-threo isomer, m. 165-6°, $[\alpha]_D^{25} 18.2^\circ$ (EtOH); L-threo isomer, m. 165-6°, $[\alpha]_D^{25} -13.2^\circ$ (EtOH). Treatment of the sulfonic acid with eq. NaHCO₃, filtration, and

filtered and recrystd. from C₆H₆ gives 1.4 g. BzC(=NOH)-CH₂OH (I), leaves, m. 106.5-8.0°. I (500 mg.) in 10 ml. MeOH reduced with Pd-C and H 30 min. at 25°, and the product concd. and recrystd. from MeOH-AcOEt gives 250 mg. *dl*-PhCH(OH)CH(NH₂)Me.HCl (II), leaves, m. 190-2°. II (40 mg.) in 0.4 ml. water and 0.4 ml. C₆H₆ benzoylated with 30 mg. BzCl and 10% NaOH and the product recrystd. from water give *dl*-PhCH(OH)CH(NH₂)Bz (III), needles, m. 142-4°. Catalytic reduction of 300 mg. I in 18 ml. N HCl with 150 mg. 10% Pd-C at 10° (117.6 ml. H absorbed in 1 hr.), the product concd. *in vacuo*, washed with AcOEt, the aq. layer concd., the residue in MeOH treated with Et₂O, the NH₂Cl filtered off, the filtrate concd., the residue in 0.5 ml. C₆H₆ benzoylated with 0.25 g. BzCl and 10% NaOH yields 110 mg. of a mixt. (IV) of *dl*-N-benzoylnorephedrine and its γ -isomer, leaves, m. 130-3°; IV heated 5 min. with 1 ml. 10% HCl and the product recrystd. from MeOH-Me₂CO give 80 mg. *dl*-1-

Dnat. Biol. + Med. Chem. AMS USSR

M.M. STEM YAKIN

and *p*-O₂NCH₂COCl gave 95% *p*-O₂NCH₂CONHCH₂CH(OH)CH₂CO(NH)CH₂CONHCOCH₂Cl; *d*-threo isomer, m. 203-4° (decomp.); $[\alpha]_D^{25}$ -28.3°. Treatment of *p*-HOCH₂CH(OH)CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl with Me₂SO₄ in the presence of aq. NaOH at 25-30° gave 23% *p*-MeOCH₂CH(OH)CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl; *d*-threo isomer, m. 101-2°; $[\alpha]_D^{25}$ -34.2° (*Me*₂CO); *L*-threo isomer, m. 101-2°; $[\alpha]_D^{25}$ -32.9° (*Me*₂CO); *dl*-threo form, m. 107-7.5°. *p*-HOCH₂CH(OH)CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl treated with aq. NaHCO₃ followed by AgNO₃, and the dried Ag salt treated with MeI 8 hrs. gave 80% *p*-MeOCH₂CH(OH)CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl; *d*-threo isomer, m. 128-9°; $[\alpha]_D^{25}$ -29.0° (*Me*₂CO). I.HCl treated with KOAc in MeOH, followed by BaH, kept 1 hr. at 20° and heated to reflux gave after diln. with H₂O 71% *p*-Ph₂N₂CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl; *D*-threo isomer, m. 153-4°; $[\alpha]_D^{25}$ -47.5° (*Me*₂CO); *L*-threo isomer, m. 153-4°; $[\alpha]_D^{25}$ 45.8° (*Me*₂CO); *dl*-threo form, m. 146-7°. I.HCl in MeOH with KOAc, followed by PhNO₂ in AcOH gave after 12 hrs. at 15-20° and diln. with H₂O 40% *p*-Ph₂N₂CH₂CO(NH)CH₂CH(OH)NHCOCH₂Cl; *D*-threo isomer, m. 144-5°; $[\alpha]_D^{25}$ -60.1° (*Me*₂CO); *L*-threo isomer, m. 144-5°; $[\alpha]_D^{25}$ 57.1° (*Me*₂CO); *dl*-threo form, m. 160-1°. I.HCl with NaOAc in MeOH, followed by *m*-ONC₆H₄NO₂ in AcOH 20 hrs. at 4-6° gave

76% p -(m -O₂N₂C₆H₃N₂)C₆H₄CH(OH)CH(CH₂OH)NHCO-CH₂C₆H₅. D-threo isomer, m. about 100°, $[\alpha]_D^{25}$ -41.2° (Me₂CO); the product crystallizes with 1.5 moles solvent (CCl₄ or C₆H₆). LiCl diazotized in aq. HCl and treated with PhOH in aq. NaOH-Na₂CO₃ gave 52% t -(p -HOC₆H₄)- N : N 'C₆H₄CH(OH)CH(CH₂OH)NHCOCH₂C₆H₅. D-threo isomer, m. 179-81°, $[\alpha]_D^{25}$ -59° (Me₂CO); L-threo isomer, m. 179-81°, $[\alpha]_D^{25}$ 57.4° (Me₂CO); DL-threo form, m. 171-2°. Also in *J. Gen. Chem. U.S.S.R.* 25, 1147-51 (1955) (Eng. translation). G. M. Kosolapoff

G. M. Kosolapoff

KARAPETYAN, M. G.

USSR/Chemistry - Antibiotics

Card 1/2 Pub. 22 - 27/54

Authors : Shemyakin, M. M., Memb.Cor.Acad. of Sc., USSR; Kolosov, M. N.; Levitov, M. M.; Germanova, K. I.; Karapetyan, M. G.; Shvetsov, Yu. B.; and Bamdas, E. M.
Title : Relation between structure and antimicrobial activity of chloromycetin (levomycetin) and the mechanism of its reaction

Periodical : Dok. AN SSSR 102/5, 953-956, Jun 11, 1955

Abstract : It is shown that the high selectivity of the biological effect of chloromycetin on microbes is determined simultaneously by the following factors: 1) strong polarizing effect of the *p*-nitrophenyl radical, the geometrical dimensions of which are of no importance; 2) strong polarizing effect of the dichloroacetyl radical, which should satisfy even the most specific geometrical requirements; and 3) defined geometrical dimensions and corresponding conformation of the aminopropanediol group. The relation between the structure and biological activity of chloromycetin is explained.

Institution : Acad. of Med. Sc., USSR, Inst. of Biol. and Med. Chem.

Submitted : January 27, 1955

Card 2/2 Pub. 22 - 27/54

Periodical : Dok. AN SSSR 102/5, 953-956, Jun 11, 1955

Abstract : Five references: 2 USSR and 3 USA (1858-1955). Diagrams.

KARAPETYAN-M.G.

Chemistry of chloromycetin (levomycetin). VIII. Dependence of antimicrobial activity of chloromycetin on its structure and the mechanism of action of chloromycetin. M. M. Shemyakin, M. N. Kolosov, M. M. Levitov, K. I. Germanova, M. G. Karapetyan, Yu. B. Shvetsov, and E. M. Banchas. *Zhur. Obshch. Khim.* 26, 773-82 (1956); cf. *C.A.* 49, 16049b, No. 3291c. — Biol. tests of several N-aryl derivs. of chloromycetin against *Staphylococcus aureus*, *Escherichia coli*, *Bacillus subtilis*, and *Vibrio fluorescens* were performed. The results indicate that the *p*-nitrophenyl group is important to the activity of the drug both through its electronic behavior and its polarizing action on the rest of the mol.; the geometric dimensions of this part of the mol. are not important in contrast to the import of geometric dimensions in the aminopropanediol portion of the mol. The NO_2 group can be shifted without loss of activity to other conjugated locations, and compds. with $\text{p-O}_2\text{NC}_6\text{H}_4\text{N}-$ or $\text{p-O}_2\text{NC}_6\text{H}_4\text{CH}_2\text{N}-$ linkages are highly active; compds. without the NO_2 group or those with it in unconjugated locations ($\text{p-O}_2\text{NC}_6\text{H}_4\text{CONH}-$) are inactive or weakly active. The biol. activity of chloromycetin analogs drops off in the series of the *p*-phenyl substituents: NO_2 , CN , CO_2Me , Cl , SO_2Me , SO_2NH_2 . Geometry and polarization in chloromycetin are discussed at length. New analogs were prep'd. By heating 6 g. *DL*-*threo*-1(*p*-nitrophenyl)-2-amino-1,3-propanediol (I), 7.8 g. *Me* γ,γ,γ -trichloroacetonate, and 4 ml. iso-AmOH to 110° 5 min., followed by treatment with

7

1/2

Inst. Biol. + Med. Chem., VIMS USSR

SHEMYAKIN, M. M.

BtOAc gave 17% *DL-threo-1-(p-nitrophenyl)-2-(γ,γ,γ-trichlorocrotonylamino)-1,3-propanediol*, m. 165-6° (from $\text{CH}_2\text{CH}_2\text{Cl}_2$), I (6 g.) in 350 ml. BtO and 100 ml. 0.5N KOH treated with 0.1 g. $\text{CCl}_3\text{CH}_2\text{CH}_2\text{COCl}$ (br 97%) 0.5 hr. gave 87% *DL-threo-1-(p-nitrophenyl)-2-(γ,γ,γ-trichlorobutyrylamino)-1,3-propanediol*, m. 116-17° (from $(\text{CH}_2\text{Cl})_2$). *D*- or *L*-form of I (9 g.) similarly treated with $\text{CHCl}_2\text{CH}_2\text{CH}_2\text{COCl}$ (br 70-81°, n_D 1.6165) gave 70-5% *D-threo-1-(p-nitrophenyl)-2-(γ,γ,γ-dichlorocrotonylamino)-1,3-propanediol*, m. 84-6° (from BtOAc and $(\text{CH}_2\text{Cl})_2$), [α]_D²⁵ -70.8° (Me₂CO); *L-threo* analog, m. 84-6°, [α]_D²⁵ 67.6° (Me₂CO); *DL*-analog, prep'd. by mixing the *D* isomers, m. 144-5°. I (6 g.) in 300 ml. dry dioxane was treated at 12-15° with 2.45 g. $\text{CCl}_3\text{CH}_2\text{CH}_2\text{COCl}$ over 0.5 hr.; after 0.5 hr. shaking the mixture was filtered and concd. *in vacuo*, treated with BtOAc, washed with dil. H_2SO_4 and 20% NaCl, and evapd., yielding 88% *DL-threo-1-(p-nitrophenyl)-2-(γ,γ-dichlorocrotonylamido)-1,3-propanediol* (II) hydrate (from heptane and $(\text{CH}_2\text{Cl})_2$ or BtOAc- $\text{CICH}_2\text{CH}_2\text{Cl}$), m. 72-3°; the water of hydration is lost at 100° *in vacuo*. This (0.2 g.) in dry dioxane treated with 2 drops dry Et₃N and kept 45 hrs. gave 90% *DL-threo-1-(p-nitrophenyl)-2-(γ,γ-dichlorocrotonylamino)-1,3-propanediol*, m. 144-5°, identical with the above described. Refluxing II with 20% HCl 2 hrs. gave 87% $\text{CCl}_3\text{CH}_2\text{CH}_2\text{CO}_2\text{H}$ and 91% I. G. M. Kosolapoff

2/2

Karapetyan, M. G.

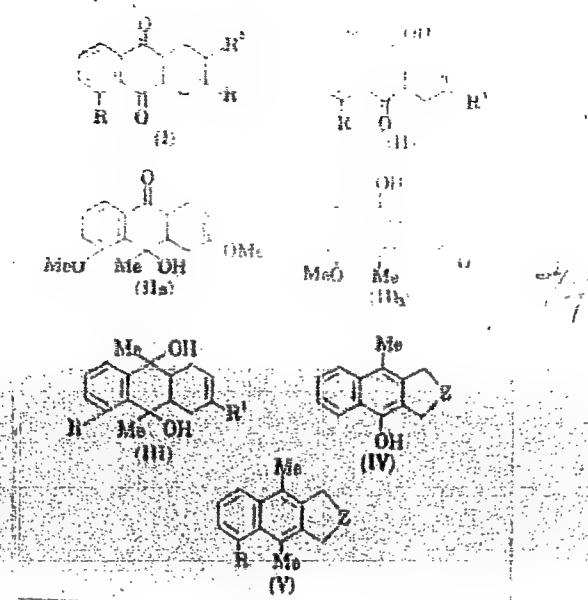
Initial stages of synthesis of tetracyclines. M. M. Shem
Jukn, M. N. Kohlsoy, M. G. Karapetyan, and E. S. Sotnik
J. Russ. Akad. Nauk. SSSR 117 (69): 1-10.
Initial steps of the synthesis of the tetracycline group, which are reported. Condensation of 1,4-naphthoquinones with butadiene and its derivs. at 100° gave the following (I) (R, R', R' given): H_1 , MeO_1 , H_2 , 82%, m. 148-4°; MeO_1 , H_2 , 81%, m. 123° (λ 229 and 336 m μ), Ac_1 , H_2 , 91%, m. 113.5-14.5° and 135.6-0.5°. The condensation of β -methoxymaphthoquinone with $CH_2=CHCO_2OMe$ was run in C_6H_6 under CO_2 12 hrs. at 100° yielding (II), which gave (III) H_1 , MeO_1 , H_2 , 70%, m. 135.5° (λ 224 and 361 m μ), MeO_1 , H_2 , 12%, m. 194.6° (λ 356 and 347 m μ). I (MeO_1 , MeO_2 , H_2) gave 2 products, II (MeO_1 , MeO_2), 12%, m. 191.5° and IIa, 19%, m. 137.6-8.5°. The structures were proved by conversion to I $'$ and 1,10-hydroxymethoxyhydroanthracenes whose infrared spectra showed typical elevation of HO with MeO group. Use of excess Me_2MgI and reversal of the order of addition gives III (R and R' given): H_1 , H_2 , m. 166.7°, 238, 286, 295, and 297 m μ ; H_1 , MeO_1 , 49%, m. 171-2°, MeO_1 , H_2 , 49%, m. 139-40° (λ 272 and 270 m μ). The ketols and the glycols are stable in air in contrast to the 1-ketols.

Inst. Biol. + Med. Chem. AM-157F

Kolosov, M. N.; KakaP et YAN, N. C. -

This indicates a trans structure of the former compds. owing to epimerization of 1 of the asym. centers. The C-10-asym. center can be exand. on the basis of the postulates of Crand and Eiblitz (C.A. 48, 2645), which lead to the Me group being cis in respect to the H on C-10a. Thus, II correspond geometrically to the natural tetracycline antibiotics. This is confirmed by acidic treatment of III which leads to their dehydration. Heating with aq. dil. HCl 0.5 hr. at 60° leads to dehydration to the following IV (R and Z given): H, CH:CH, 83%, m. 117-19° [acetate, m. 159-0°; Me ether, m. 97-0° (λ 230, 282, 297 mμ)]; MeO, CH:CH, 90%, m. 116-16° (λ 241, 311, 321 and 359 mμ) [dihydro series, m. 107.5-8° (λ 237, 312, 323, and 369 mμ)]. III (R = MeO, R' = H) give 90% V (R = MeO, Z = CH:CH), m. 115-

21
14



Kolosov, N.N., Kozlova, N.G., et al. *ibid.* 1969, 10, 1207.

18.5° (λ 241, 266, 306, 310, and 333 nm). The ketones and the glycols, which are really end derivatives, are obtained by HCl under the above conditions yielding the corresponding ketones of the tetrahydro-*trans*-triacontane series. Thus II ($R = R' = MeO$) gave IV ($R = MeO$, $Z = CH_2$), m. 136-7°, while IIa gave IIb, m. 136-8°. IIb ($R = H$, $R' = MeO$) gave 94% IV ($R = H$, $Z = CH_2CO$), m. 120-1°. If the substance, however, is shaken in Et₂O with a 1:1.1 ratio at 20° only the MeO group of ring 1 is attacked. Thus, III ($R = H$, $R' = MeO$) gave 53% 2-*exo*-9,10-dihydro-*trans*-9,10-dimethyl-4,5,6,7,8,9,10,11-octahydro-*trans*-triacontane, m. 136-6°.

G. M. Kosulakoff

PM
MT

SHEMYAKIN, M.M.; SHCHUKINA, L.A.; VINOGRADOVA, Ye.I.; KOLOSOV, M.N.; VDOVINA, R.G.; KARAPETYAN, M.G.; RODIONOV, V.Ya.; RAVDAL', G.A.; SHVETSOV, Yu.B., BANDAS, E.M.; CHAMAN, Ye.S.; YERMOLAYEV, K.M.; SEMKIN, Ye.P.

Research data on sarkomycin and its analogues. Part 1: Synthesis of dihydrosarkomycin and its antipode. Zhur. ob. khim. 27 no.3:742-748 Mr '57. (MLRA 10:6)

1. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR.

(Sarkomycin)

AUTHORS:

Shemyakin, M. M., Molosov, M. N., Karapetyan, H. G.,
Rodionov, V. Ya.

SOV/79-28-3-15/66

TITLE:

Investigations on Sarcomycin and Its Analogs (Issledovaniya
v oblasti sarkomitsina i yego analogov) II. Synthesis of the
Sarcomycin Isomer (II. Sintez izomera sarkomitsina)

PERIODICAL:

Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp. 2068-2074
(USSR)

ABSTRACT:

In connection with a previous publication on sarcomycin (Ref 1) the authors worked on synthesizing this antibiotic (Formula I) and its ethyl ester isomer (II), which differs from sarcomycin in the positions of its methylene groups. Although sarcomycin has a simple structure its synthesis is especially difficult because it is easily oxidized and has a tendency to polymerize and to form isomers. Therefore, an energetic reaction cannot be carried out, and only mild reagents and lowered reaction temperatures can be used. Since the characteristic β -methylene- γ -keto-acid group in sarcomycin cannot stand strong treatment the splitting of quaternary ammonium salts of the type

Card 1/3

Investigations on Sarcomycin and Its Analogs.
II. Synthesis of the Sarcomycin Isomer

SOV/79-28-8-15/66

$-\text{COCH}(\text{CH}_2\text{NR}_3)-$ seemed to be a promising synthetic method. One can synthesize in various ways the compounds of type (III) necessary for producing sarcomycin. The simplest way to synthesize these compounds was to use the easily obtainable cyclopentanone-3-carboxylic acid (IV), by introducing the dialkyl aminomethyl group into the 2 position by the Mannich reaction and then halogenalkylating the resulting tertiary amine. The synthesis of the isomer of the antibiotic sarcomycin (which is used against malignant tumors) was accomplished in this way. The starting material was cyclopentanone-3-carboxylic acid. This compound was condensed with formaldehyde and piperidine. The next steps were esterification and iodomethylation, and the end-product was then converted to the corresponding quarternary ammonium salt. The splitting of the salt yielded the ester of the iso-sarcomycin. There are 10 references, 2 of which are Soviet.

ASSOCIATION: Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR (Institute of Biological and Medical Chemistry of the Academy of Medical Sciences, USSR)

Card 2/3

Investigations on Sarcomycin and Its Analogs.
II. Synthesis of the Sarcomycin Isomer

30970-22-0-12-00

SUBMITTED: March 18, 1957

Card 3/3

5 (3)
AUTHORS:Shemyakin, M. M., Kolosov, M. N.,
Arbuzov, Yu. A., Karapetyan, M. G.,
Chaman, Ye. S., Unishchenko, A. A.

SOV/73-29-6-13/72

TITLE:

Investigations in the Field of Tetracyclines (Issledovaniya v
oblasti tetratsiklinov). IV. Investigation of Different Syn-
theses of the Tricyclic System DCB of the Tetracyclines (IV.
Izucheniya putey sinteza tritsiklicheskoy sistemy DCB teta-
tsiklinov)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1831 - 1842
(USSR)

ABSTRACT:

The structure of the well-known tetracyclines (I) has a specific characteristic which indicates the ways and methods necessary for carrying out the complete synthesis of compounds of this type. On the basis of certain theoretical considerations the authors tried to synthesize such ketols of the hydroanthracene series of type (III) and (IV) in which two rings had to be similar with respect to structure and spatial arrangement to the rings D and C of the tetracyclines. The third ring had to offer the structural conditions for the subsequent building-up of the ring A and for the introduction of the necessary func-

Card 1/3

Investigations in the Field of Tetracyclines.
IV. Investigation of Different Syntheses of the
Tricyclic System DCB of the Tetracyclines

SOV/79-29-6-13/72

tional groups of the ring B of the tetracyclines. The adopted method of synthesizing these compounds consisted in the condensation of the 1,4-naphthoquinones with butadiene or its derivatives and the transformation of the resultant adducts (II) into the ketols (III) which, on their part, can easily be hydrolyzed to give the oxy-diketones (IV). The first step, the diene synthesis, takes place readily by heating naphthoquinone with the diene. By condensation of the 5-methoxy-naphtho-quinone with 2-methoxy-butadiene two isomeric adducts - (II d) and (II e) in the ratio 4 : 1 - are formed. The second step, the selective transformation of the C₉-keto group of the adducts (II) into the tertiary methyl carbinol grouping meets with some difficulties, it was however possible to carry out the reaction by means of magnesium methyl halide. The third step of the synthesis of the compounds (IV), the hydrolysis of the enol-methoxyl up to the keto group is only possible when using dilute acids. The synthesis of the tricyclines (XV) was thus performed on the basis of naphthoquinones, in which two rings are analogous with the rings D and C of the natural tet-

Card 2/3

Investigations in the Field of Tetracyclines.
IV. Investigation of Different Syntheses of the
Tricyclic System DCB of the Tetracyclines

SOV/79-29-6-13/72

racyclines with respect to structure and spatial arrangement. The presence of the reactive double bond, the enol grouping or the carbonyl group in the third ring of the compounds (XV) offers further possibilities for the introduction of substituents and for the building up of the fourth ring of the tetracyclines. There are 12 references, 4 of which are Soviet.

ASSOCIATION: Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh nauk SSSR i Institut organicheskoy khimii Akademii nauk SSSR (Institute of Biological and Medical Chemistry of the Academy of Medical Sciences, USSR, and Institute of Organic Chemistry of the Academy of Sciences, USSR)

SUBMITTED: June 9, 1958

Card 3/3

KARAPE TYAN, M. G.

5(3)	AUTHORS:	Shayegan, M. H., Amedzeman, H., Kolosov, M. E., Arbuzov, T. N., Kots, Tatyana, Stec, S. Hail-Yu, Karpov, M. G., Gorovitch, A. I.
	TITLE:	Intermediate Stages in the Synthesis of Tetracyclines
	PERIODICAL:	Soviet Akademik Nauk SSSR. 1955, Vol. 128, Nr. 1, pp. 115-116 (1955)

ABSTRACT: In 1956, the authors published tricyclic ketolactam (III) as far as the structure of their ring system is concerned. In the third ring they have reactive sites, as shown in Part I (see Part II). The present Paper involves the addition of heteroatoms to the ring system to the 2,3-doubly-labile sites of compounds (I) for introducing active groups into tricyclic molecules. The active groups are necessary for selective reactions. (I) in its Berlin form is a further extension of the γ -groups, or heteroacrylates by a method previously elaborated. Infrared, ultraviolet, and mass spectra are given for compounds (I) with typical carbonylic reagents such as $\text{H}_2\text{N}-\text{CO}-\text{NH}_2$ and HgCl_2 .

ketones with good yields are forced. Constants and analytical results of synchrohelical compounds are given in Table I. The synthesis of tricyclic acetals with active groups in the bearing added by the authors provide the possibility of building up the α -acetyl or tetraacetyl derivatives. There are 1 Table and 3 references, of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo AN SSSR (Institute of Organic Chemistry) Inst. N. D. Zelinskogo,
Institut biologicheskoy i meditsinskoy khimii AN SSSR (Institute of Biological and Medical Chemistry, AN SSSR)
(Institute of Biological and Medical Chemistry, AN SSSR)

RECORDED: June 4, 1954

Card 2/2

KOLOSOV, M.N.; DOBRYNIN, V.N.; GUREVICH, A.I.; KARAPETYAN, M.G.

Tetracyclines. Report No.16: Absolute configuration of tetracyclines.
Izv. AN SSSR. Otd. khim. nauk no.4:696-701 Ap '63. (MIRA 16:3)

1. Institut khimii prirodnykh soyedineniy AN SSSR.
(Tetracycline)

GUREVICH, A.I.; KARAPETYAN, M.G.; KOLOSOV, M.N.; KOROBKO, V.G.;
ONOPRIYENKO, V.V.; SHEMYAKIN, M.M., akademik

Synthesis of hydronaphthacenes related to anhydrotetracyclines. Dokl.
AN SSSR 155 no.1:125-127 Mr '64. (MIRA 17:4)

1. Institut khimii prirodykh soyedineniy AN SSSR.

GUREVICH, A.I.; KARAPETYAN, M.G.; KOLOSOV, M.N.; CHOPRIYENKO, V.V.;
SHEMYAKIN, M.E.

New method of synthesizing tetracycline ring A. Izv. AN.SSSR.
(MIRA 17:6)
Ser.khim. no. 5:945 My '64.

1. Institut khimii prirodnykh soyedinenii AN SSSR.

SHEMYAKIN, M.M.; KOLOSOV, M.N.; SE YUY-YUAN' [Hsieh Yü-yuan]; KARAPETYAN, M.G.;
SHEN' KIMIAY-YUY [Shen Huai-yü]; GUREVICH, A.I.

Tetracyclines. Report No.21: Synthesis of 2- and 3-substituted
10-keto-9-hydroxy-9-methyl-1,2,3,4,4a,9,9a,10-octahydroanthracenes.
Izv. AN SSSR. Ser. khim. no.6:1013-1024 Je '64.

(MIRA 17:11)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

SHEMYAKIN, M.M.; KOLOSOV, M.N.; KARAPETYAN, M.G.; SE YUY-YUAN' [Hsieh Yu-yuan];
ONOPRIYENKO, V.V.

Tetracyclines. Report No.22: Stereochemistry of 2-, and 3-substituted 10-keto-9-hydroxy-9-methyl-1,2,3,4,4a,9,9a,10-octahydroanthracenes. Izv. AN SSSR. Ser. khim. no.6:1024-1035 Je '64.
(MIRA 17:11)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

KOLOSOV, M.N.; POPRAVKO, S.A.; KOROBKO, V.G.; KARAPETYAN, M.G.; SHEMYAKIN, M.M.

Tetracyclines. Part 30: Construction of a tricyclic system DCB
of tetracycline antibiotic. Zhur. ob. khim. 34 no.8:2547-2553
Ag '64. (MIRA 17:9)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

GUREVICH, A.I.; KARAPETYAN, M.G.; KOLOSOV, M.N.; KOROBKO, V.G.; SHEMYAKIN, M.M.

Tetracyclines. Part 42: Synthesis of 11,12- β -dideoxy-4-dedimethylamino-5 α ,6- α -hydrotetracycline. Zhur. ob. khim. 35 no.4:668-673 Ap '65. (MIRA 18:5)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

NAZAROVA, Taisiya Fedorovna; KARAPETYAN, Margarita Karpovna;
ROZENTUL, Lidiya Moiseyevna; MASHKILLEISON, A.L., red.;
MATVEYEVA, M.M., tekhn. red.

[Physical therapy in cosmetics; practical manual for
physicians] Fizioterapiia v kosmetike; prakticheskoe po-
sobie dlia vrachei. Moskva, Medgiz, 1963. 114 p.
(MIRA 16:6)

(PHYSICAL THERAPY) (COSMETICS)

KARAPETYAN, V.K.; ROZENTUL, L.M.

Treatment of warts with liquid nitrogen. Vest. derm. i ven.
37 no.6:73-75 Je '63. (MIR 17:6)

1. Fizioterapetvitcheskoye otdeleniye Instituta vrachebnoy
kosmetiki (dir. A.F. Akhabadze) Ministerstva zdravookhraneniya
RSFSR.

RUBTSOVA, L.K.; POCHAPINSKIY, V.I.; LYUOSEV, V.A.; GUBINSKAYA, Ye.I.;
KARAPETYAN, M.K.; ZALEM, Z.Ya.

Experimental and clinical studies on ointments containing
tetracycline. Antibiotiki 10 no.5:472-475 My '65. (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov,
Moskovskiy oblastnoy nauchno-issledovatel'skiy klinicheskiy
institut imeni Vladimirsogo i Institut vrachebnoy kosmetiki,
Moskva.

KARAPETYAN, N.M.; TOROSYAN, A.S.

ZP-1 protective device used in the 1000 volt circuits of mobile
substations for electric tractor units. Izv. AN Arm. SSR. Ser. FMT
nauk 9 no. 8:55-67 '56. (MLRA 10:2)

1. Laboratoriya elektrotehniki AN Arzvanskoy SSR.
(Electric controllers)

SOV/112-58-2-2132

Translation from: Referativnyy zhurnal, Elektrotehnika, 1958, Nr 2, p 55 (USSR)
AUTHOR: Grdzelyan, R. A., Dzhandzhugazov, N. G., Karapetyan, M. M., and
Torosyan, A. S.

TITLE: A Measuring Circuit for Studying AC Corona Losses (Izmeritel'naya
skhema dlya issledovaniya poter' energii na koronu peremennogo toka)

PERIODICAL: Izv. AN Arm. SSR, Ser. tekhn. n., 1957, Vol 10, Nr 1, pp 17-29

ABSTRACT: A circuit for measuring corona loss under high mountain conditions
(1,100 m and 2,000 m above sea-level) for 220-kv lines is described. Power
was measured by a special milliwattmeter with a maximum sensitivity of 0.1
w/m²(?). Its voltage winding can be fed either from a capacitive no-loss vol-
tage divider through a 3-stage amplifier of high input impedance and with vol-
tage and current feedback, or from a resistive voltage divider through a trans-
former having very low inductance and no-load current. Possible errors are
analyzed and found to be $\pm 5\%$. A circuit alignment is also indicated.

N.N.T.

Lab of Electrical Engineering, Acad Sci ArSSR

Card 1/1

KARAPETYAN, M.M.

Problems of wave processes in mobile electrified installations.
Izv. AN Arm. SSR. Ser. tekh. nauk 10 no. 4:33-42 '57. (MIRA 10:10)

1. Laboratoriya elektrotekhniki AN Armyanskoy SSR.
(Electric waves) (Electric engineering)

GRDZELYAN, P.A.; KARAPETYAN, M.M.; STEPANYAN, N.P.; TOROSYAN, A.S.

Features in calculating yearly losses of electric energy to
the corona of mountain transmission lines. Izv.AN Arm.SSR.
Ser.tekh.nauk 12 no.6:3-14 '59. (MIRA 13:6)

Kh. Institut elektrotekhniki AN Armyanskoy SSR.
(Electric lines) (Corona (Electricity))

KARAPETYAN, M.M.

Atmospheric overvoltages in mobile electrified equipment. Izv. AN
Arm. SSR. Ser. tekhn. nauk 13 no.4:17-36 '60. (MIRA 13:11)

1. Institut elektrotehniki AN Armyanskoy SSR.
(Electric machinery) (Electric protection)

KAPAPETYAN, M.M.

Lightning protection network for mobile electrified equipment
with 6-10 kv. ratings. Trudy LPI no.242:218-225 '65.
(MIRA 18:8)

KARAPETYAN, M.V.

Conference of the readers of "Konservnaia i ovoshchesushil'naisia promyshlennost'" journal in Moscow. Kons.i ov.prom. 18 no.2:
(MIRA 16:2)
F '63. (Canning industry--Periodicals)

COUNTRY : USSR N
SUBJECY : Weeds and Weed Control
PUBLISHER : Naukova Dumka, Kiev, 1958, No. 4656
PUBL. DATE : 1958.
AUTHOR : Artyosyan, A., Karapetyan, E.
TITLE : The Influence of Lodder on the Decline in the Yield of
alfalfa, Seeds and Hay.
PUBL. PLACE : Naukova Dumka, Kiev, 1958, No. 1, 24-25
SUBJECT : No abstract.

Curator: 2/1

KARAPETYAN, N., dots.

Crotillin, a new herbicide. Nauka i pered. op v sel'khoz. 9 no.6:
45 Je '59. (MIRA 12:9)

1. Armyanskiy sel'skokhozyaystvennyy institut.
(Herbicides)

CHAYLAKHYAN, M.Kh.; MEGRABYAN, A.A.; KARAPETYAN, N.A.; KALADZHYAN, N.L.

Effect of growth promoting substances on tubercle formation
and the growth of alfalfa plants. Dokl. AN Arm. SSR 36 no.3:
189-192 '63. (MIRA 16:10)

1. Institut mikrobiologii AN Armyanskoy SSR.

KARAPETYAN, N. A.

USSR/Biology - Plant Diseases

Nov/Dec 53

"Effect of Antagonists and Their Antibiotic Substances on the Microorganism That Causes Gummosis of Cotton Plants," R. O. Mirzabekyan and N. A. Karapetyan, Sector of Microbiol, Acad Sci USSR; Inst Microbiol, Acad Sci USSR

Agrobiol, No 6 (84), pp 55-62

Microbiol antagonists from the soil, antibiotic substances of which exert an antibacterial action on the causative factor of the gummosis *Pseudomonas*

276T3

malvacearum, protect cotton plants against that infection. Soviet scientists have made some study of the action of antagonists on phytopathogenic microorganisms, particularly on those that cause fungus diseases in crops. Of all antagonists that have been isolated actinomycete strains Nos 4, 5, 15, 13, and 15(H) have proved to be the most effective against *Pseudomonas malvacearum*. The antibiotic from No 15(H) is easily absorbed by all organs of cotton plants and protects them from initial infection with gummosis. No 15(H) antibiotic has been obtained from the Inst of Microbiol, Acad Sci USSR.

KARAPETYAN, N.A.

MESGRABYAN, A.A.; KARAPETYAN, N.A.

Bactericidal effect of legume seeds and sprouts on nodule bacteria.
Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 11 no.2:57-62 F '58.
(MIRA 11:3)

1. Sektor mikrobiologii AN ArmSSR.
(Legumes) (Micro-organisms, Nitrogen-fixing) (Bactericides)

CHAYLAKHYAN, M.Kh.; MEGRABYAN, A.A.; KARAPETYAN, N.A.; KALADZHYAN, N.L.

Growth promoting substances in secretions of nodule-forming
bacteria. Dokl. AN Arm. SSR 40 no.5:307-314 '65. (MIRA 18:7)

1. Institut mikrobiologji AN ArmSSR. 2. Chlen-korrespondent
AN ArmSSR (for Chaylakhyan). Submitted September 15, 1964.

KARAPETYAN, N.G.; BOSHNYAKOV, I.S.; KHAYKINA, Kh.S.; AYIRYAN, L.S.

Use of chloroprene-nitrile latex for the manufacture of benzene
and oil-resistant gloves. Kauch. i rez. 20 no.1:42-43 Ja '61.
(MIRA 14:3)

(Clothing, Protective) (Rubber goods) (Chloroprene)

31937

2138/52/000/003/001/006

A051/1126

15.9-12

AUTHORS: Karapetyan, N. G., Khaykina, Kh. S., Eos.nyan, S. I. S., Kalantaryan, L. K., Melikyan, A. M.

TITLE: Adiabatic polymerization of monomers

PERIODICAL: Kauchuk i rezina, 1952, no. 3, 1 - 4

TEXT: Monomer polymerization was conducted under adiabatic conditions, i. e., without heat elimination (the experiments were begun in 1949). The latter yields rubbers of varied properties in addition to other technological advantages. Properties can be regulated by an appropriate change in the polymer portion, produced at raised or reduced temperatures, or by selecting the conditions of polymerization. The required chloroprene concentrations in the emulsion, needed to conduct polymerization at various temperatures, are calculated according to the following formula:

$$Q = (t_2 - t_1) \cdot \frac{100}{x} \cdot c_1 \quad (1)$$

where t_2 and t_1 are the emulsion temperatures at the end and beginning of the process, respectively; Q - the heat of polymerization of 1 kg monomer, cal.;

Card, 1/3.

Adiabatic polymerization of monomers

S/138/62/000/003/001/006
A051/A126

x - the monomer concentration in the emulsion, %; C_1 - the latex specific heat. The copolymerization of chloroprene with other monomers almost completely eliminates the tendency of the rubber to crystallize under normal conditions. A study of the molecular-fractional composition of the polymers, produced by monomer polymerization under isothermal and adiabatic conditions revealed that the adiabatic chloroprene rubber was less polydispersed than the serial type: a smaller range of molecular weights, a greater portion of molecular weight μ_{av} , close to the average molecular weight, with a small decrease in the latter. The improved molecular-fractional composition of the chloroprene rubber is explained by a lower polymerization temperature at a low transformation depth, and a somewhat raised temperature at high transformation depth. Mixing was found to reduce the molecular weight of the polymer, maintaining the same nature of weight distribution of the molecular weights. In the last few years, the Yerevan' Plant of Synthetic Rubber has manufactured test batches of chloroprene rubber by the adiabatic method, yielding favourable results when employed in the cable-manufacturing industry. The adiabatic method of polymerization is also recommended for polymerization of other monomers, both in emulsions as well as solutions. There are 6 figures.

Card 2/3

3/133/62/000/003/001/00
151/A126

Adiabatic polymerization of monomers

ASSOCIATION: Yerevanskiy zavod sinteticheskogo kauchuka i ... N. Kirova
(Yerevan' Plant of Synthetic Rubber, im. S. A. Kirova)

Card 3/3 ..

X

PETROSYAN, V.P.; KARAPETYAN, N.G.; BOSHNYAKOV, I.S.; ZHAMKCHAN, S.G.

Effect of the structure of polychloroprene on its dielectric properties. Izv. AN Arm. SSR. Khim. nauki 16 no.5:429-436 (MIRA 17:1) '63.

1. Yerevanskiy gosudarstvennyy universitet i Yerevanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta sinteticheskogo kauchuka.

KARAPETYAN, N.G.; TARKHANYAN, A.S.; LYUBIMOVA, A.N.

Hydration of vinylacetylene to methyl vinyl ketone by means of
sulfuric acid solutions of cuprous oxide. Part 1: Solubility
of vinylacetylene in sulfuric acid solutions of cuprous oxide.
Izv. AN Arm. SSR, Khim. nauki 17 no. 4: 398-406. '64. (MIRA 18:6)

1. Yerevanskiy-filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta sinteticheskogo kauchuka im. akad. S.V. Lebedeva.

CHUKHADZHYAN, G.A.; VOSKANYAN, S.M.; MIGRANYAN, T.Sh.; KARAPETYAN, N.G.
Copolymers of acetaldehyde. Izv. AN Arm. SSR. Khim. nauki 17 no. 4:466
'64. (MIRA 18:6)

1. Yerevanskiy filial Vsesoyuznogo nauchno-issledovatel'skogo
instituta sinteticheskogo kauchuka im. S.V. Lebedeva.

L 62135-65 EWT(d)/EWT(m)/EWP(w)/EPZ(c)/EPR/EWP(j)/T
PC-4/Pt-4/Ps-4 RPL VR/EM/RM
ACCESSION NR: AP5016943

UR/0303/65/000/003/0015/0018
667.633.263.3

38

B

AUTHOR: Yeliseyev, V.I.; Karapetyan, N.G.; Boshnyakov, I.S.; Margaryan, A.S.

TITLE: Emulsion copolymers of chloroprene with acrylates

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 3, 1965, 15-18

TOPIC TAGS: chloroprene, acrylic acid, methacrylic acid, latex film, methyl methacrylate, emulsion copolymer

ABSTRACT: The authors worked out a method for the preparation of colloidally stable latexes based on copolymers of chloroprene with lower esters of acrylic and methacrylic acid. It was shown that latexes with the widest range of the elastic modulus of the polymer can be obtained by copolymerizing chloroprene with methyl methacrylate. The kinetics of this copolymerization were studied, the copolymerization constants of the monomers were determined, and the probable composition of the copolymer was calculated from these constants. It was found that the methyl methacrylate links of the macromolecules consist primarily of a single monomer unit, whereas the chloroprene links are made up of various quantities of monomeric units. By varying the initial ratio of chloroprene to methyl methacrylate, one can obtain latexes which yield films having

Card 1/2

L 62135-65

ACCESSION NR: AP5016943

O
varying degrees of elasticity. Electron-microscopic analysis showed that the latex is characterized by a relative monodispersity; its average particle size (770 Å) is much less than that of ordinary methyl acrylate latexes (about 2000 Å). A 64% saturation of the surface of latex particles by the emulsifier was found. The absorption of water by films of the copolymer latexes was also studied as a function of time, temperature of film formation, and content of methyl methacrylate. Orig. art. has: 4 figures, 1 formula and 2 tables.

ASSOCIATION: none

ENCL: 00

SUB CODE: OC, MT

SUBMITTED: 00

OTHER: 012

NO REF SOV: 006

Card 2/2